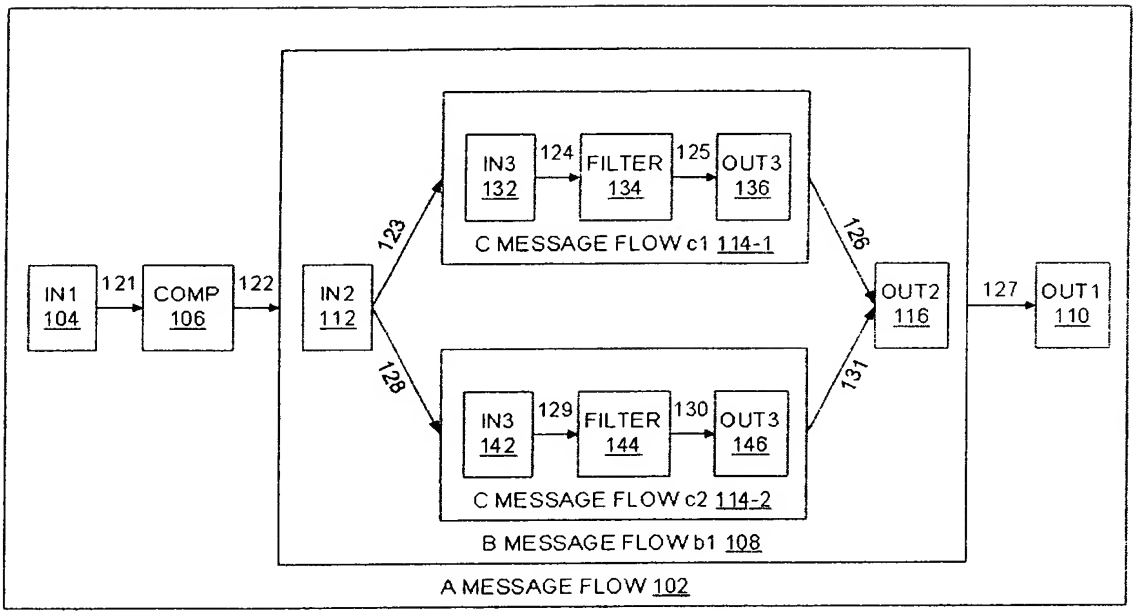
IN1
104
121
COMP
106
122
IN2
112
123
IN3
132
124
FILTER
134
125
OUT3
136
C MESSAGE FLOW c1 114-1
126
128
IN3
142
129
FILTER
144
130
OUT3
146
C MESSAGE FLOW c2 114-2
131
OUT2
116
127
OUT1
110
B MESSAGE FLOW b1 108
A MESSAGE FLOW 102
100

FIG. 1

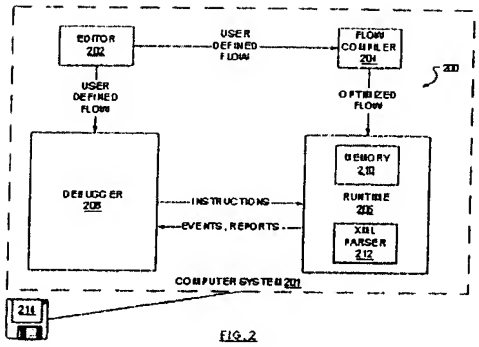
EDITOR
202
USER
DEFINED
FLOW
FLOW
COMPILER
204
200
USER
DEFINED
FLOW
OPTIMIZED
FLOW
DEBUGGER
206
INSTRUCTIONS
EVENTS, REPORTS
MEMORY
210
RUNTIME
208
XML
PARSER
212
COMPUTER SYSTEM 201
214

FIG. 2

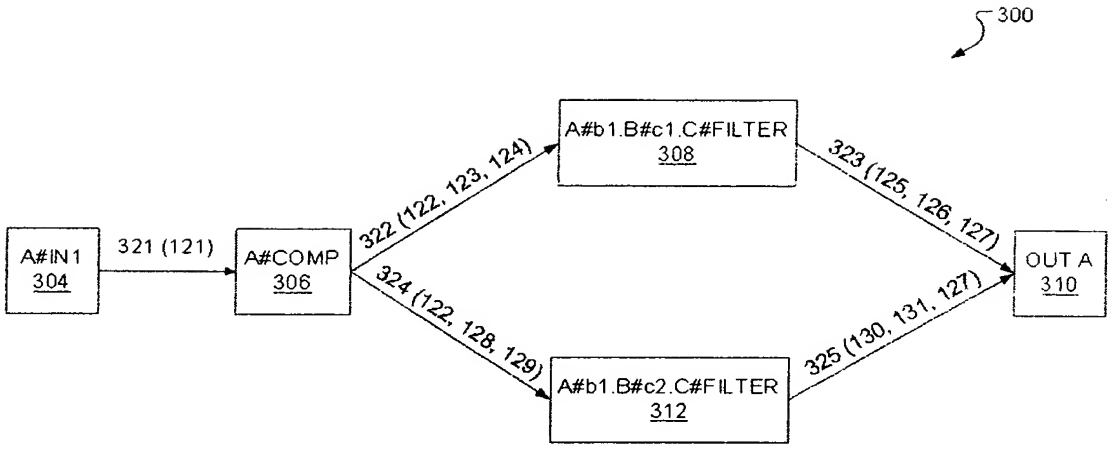
300
A#IN1
304
321 (121)
A#COMP
306
322 (122, 123, 124)
324 (122, 128, 129)
A#b1.B#c1.C#FILTER
308
A#b1.B#c2.C#FILTER
312
323 (125, 126, 127)
325 (130, 131, 127)
OUT A
310

FIG. 3

400

PHYSICAL CONNECTION	LOGICAL CONNECTIONS
321	121
322	122→ 123→ 124
323	122→ 128→ 129
324	125→ 126→ 127
325	130→ 131→ 127

FIG. 4

```
<PhysicalConnection sourceNode = id of source node
        sourceTerminal = terminal name
        targetNode = id of target node
        targetTerminal = terminal name >
   <!-- list of contained logical connections in order -->
   <LogicalConnection …/>
   <LogicalConnection …/>
<PhysicalConnection>
```

FIG. 5

```
<LogicalConnection sourceNode = id of source node
        sourceTerminal = terminal name
        targetNode = id of target node
        targetTerminal = terminal name
        order = order of this logical connection/>
```

FIG. 6

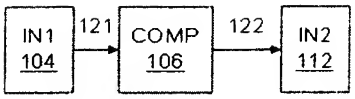

FIG. 7A

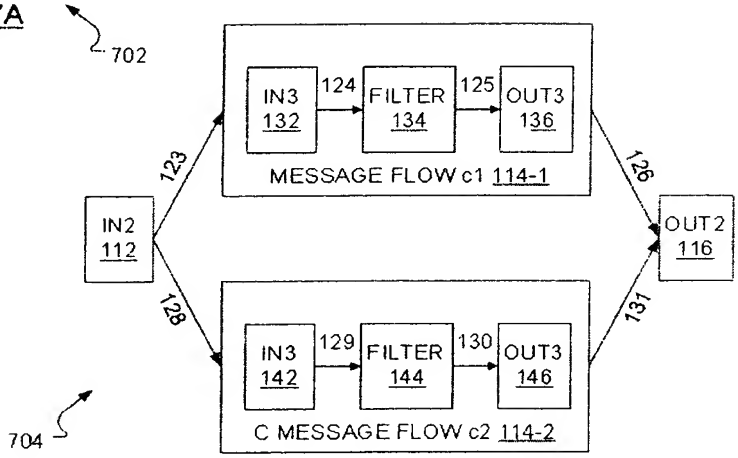

FIG. 7B

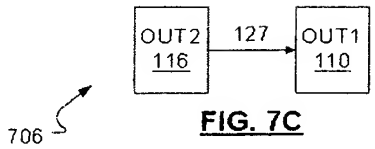

FIG. 7C

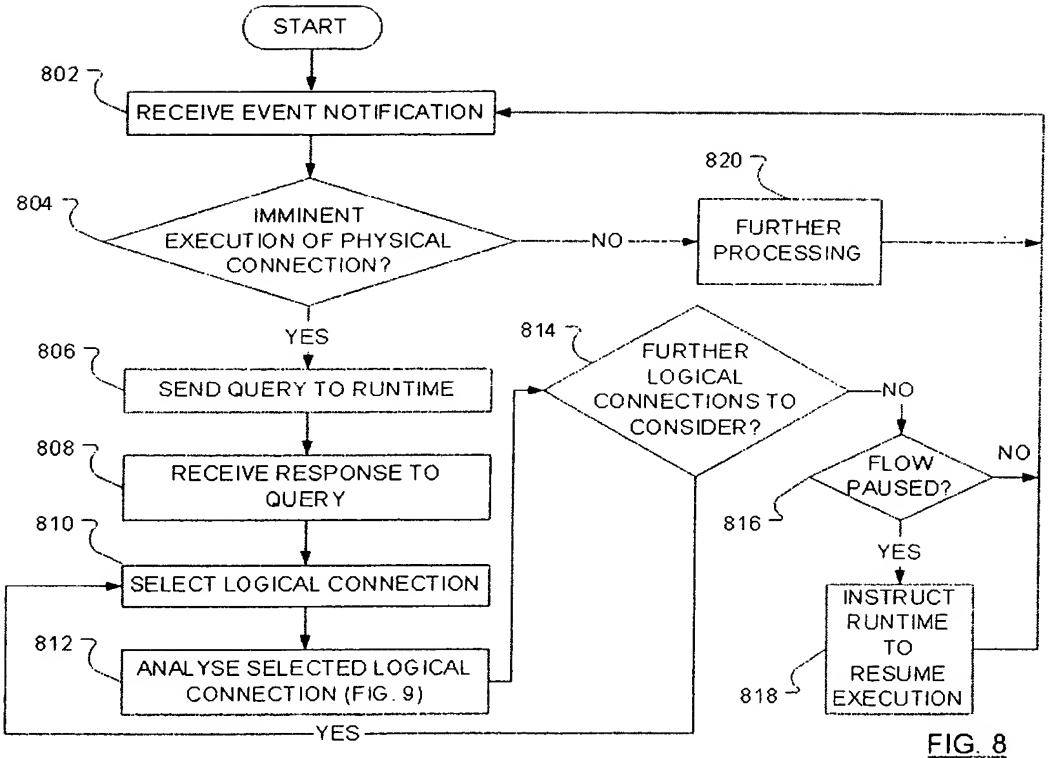
START
802
RECEIVE EVENT NOTIFICATION
804
IMMINENT EXECUTION OF PHYSICAL CONNECTION?
NO
820
FURTHER PROCESSING
YES
806
SEND QUERY TO RUNTIME
808
RECEIVE RESPONSE TO QUERY
810
SELECT LOGICAL CONNECTION
812
ANALYSE SELECTED LOGICAL CONNECTION (FIG. 9)
814
FURTHER LOGICAL CONNECTIONS TO CONSIDER?
NO
YES
FLOW PAUSED?
816
NO
YES
INSTRUCT RUNTIME TO RESUME EXECUTION
818

FIG. 8

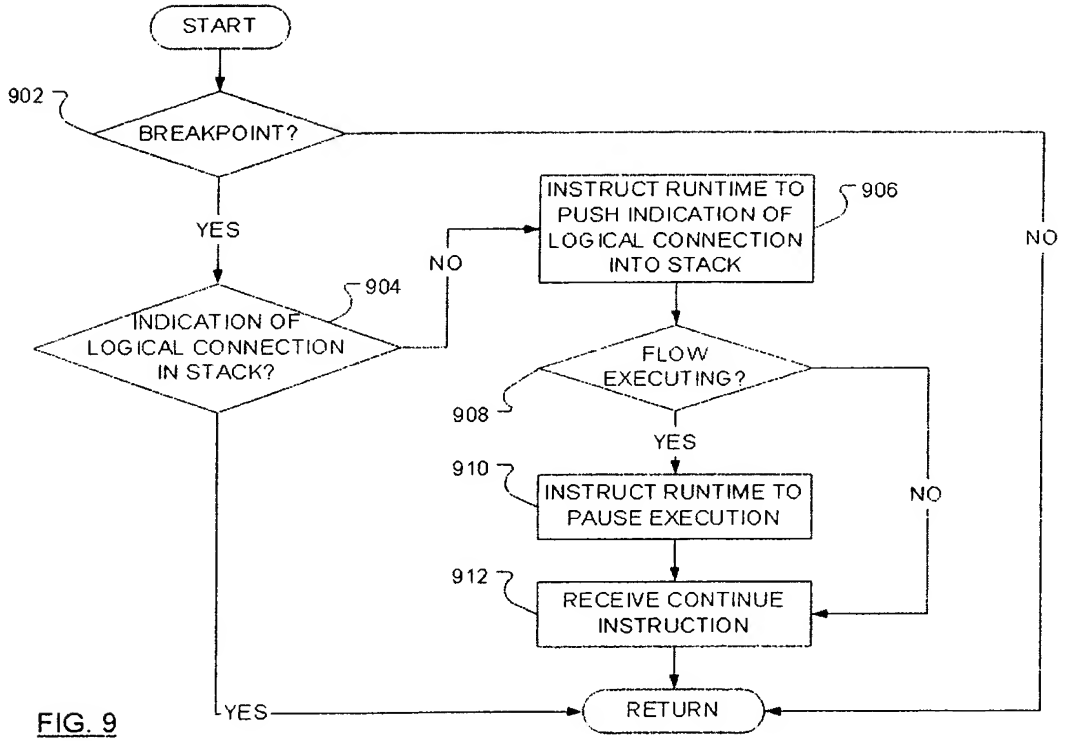
START
902
BREAKPOINT?
YES
NO
INSTRUCT RUNTIME TO PUSH INDICATION OF LOGICAL CONNECTION INTO STACK
906
NO
904
INDICATION OF LOGICAL CONNECTION IN STACK?
FLOW EXECUTING?
908
YES
910
INSTRUCT RUNTIME TO PAUSE EXECUTION
NO
912
RECEIVE CONTINUE INSTRUCTION
YES
RETURN

FIG. 9

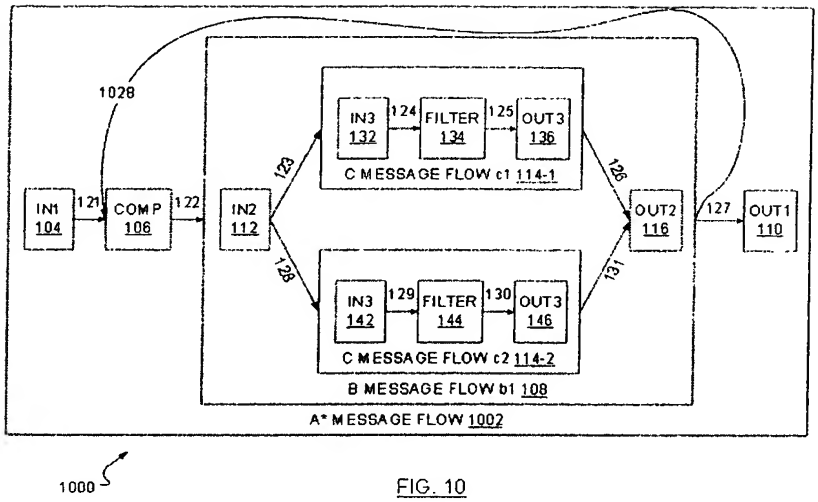
1028
IN1
104
121
COMP
106
122
IN2
112
123
IN3
132
124
FILTER
134
125
OUT3
136
C MESSAGE FLOW c1 114-1
126
OUT2
116
127
OUT1
110
128
IN3
142
129
FILTER
144
130
OUT3
146
C MESSAGE FLOW c2 114-2
131
B MESSAGE FLOW b1 108
A* MESSAGE FLOW 1002
1000

FIG. 10

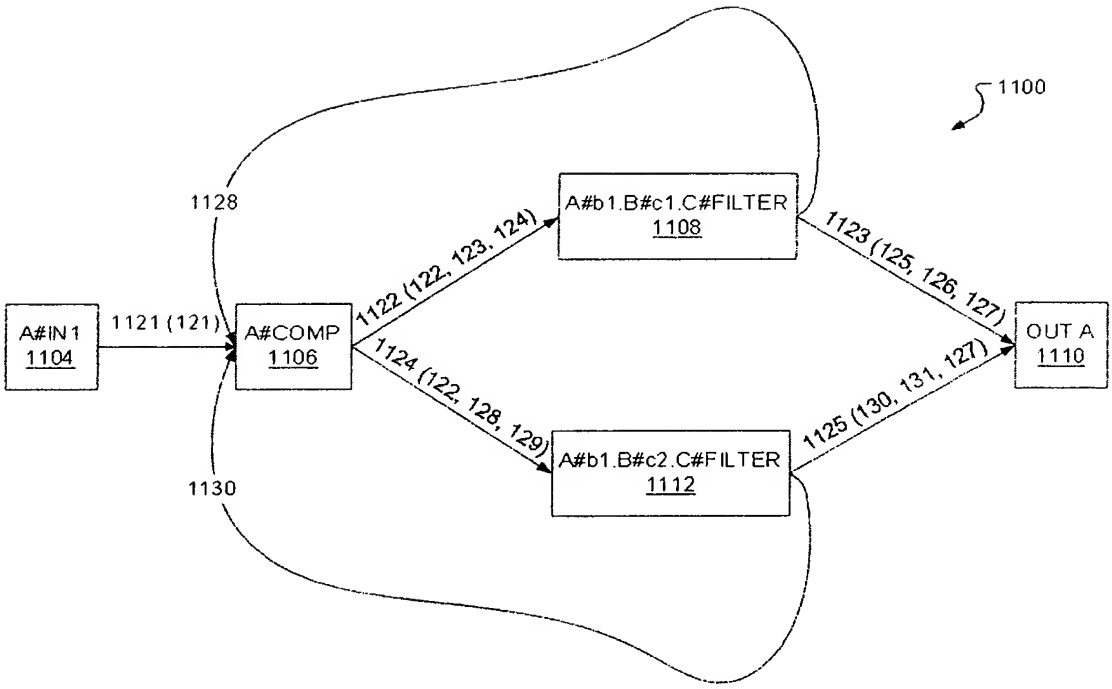
1100
1128
A#IN1
1104
1121 (121)
A#COMP
1106
1122 (122, 123, 124)
A#b1.B#c1.C#FILTER
1108
1123 (125, 126, 127)
OUT A
1110
1124 (122, 128, 129)
A#b1.B#c2.C#FILTER
1112
1125 (130, 131, 127)
1130

FIG. 11